REMARKS

Status of the Claims

- Claims 1-9, 15, and 18 are pending in the Application after entry of this amendment.
- Claims 1-9, 15, and 18 are rejected by Examiner.
- Claim 1 is currently amended.

Claim Rejections Pursuant to 35 U.S.C. §103

Claims 1-3, 5-9, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art in view of U.S. Patent No. 6,259,918 to Labonte et al. (Labonte) in view of U.S. Patent No. 6,941,152 to Proctor, Jr. et al. (Proctor). Applicant respectfully traverses the rejection.

Claim 1 is amended to more clearly recite the aspect that mono-receiver frames are exchanged between the transmitting station and the receiving station, in a directional manner using directional antennas located at the transmitting station and at the receiving station. This aspect finds support in the as-filed specification via Figure 1 and its corresponding text.

The current Office Action dated 5/4/2009, cites the Admitted Prior Art as being represented on page 2, lines 5-8, lines 21-23, and 25-27 which includes communications (transmission and reception) using an omnidirectional antenna where multi-receiver frames are RTS and CTS frames and mono-receiver frames are DATA and ACK frames.

The current Office Action cites Labonte in Figures 4A and 4B, item 110 as teaching mono-receiver transmitting between transmitting station and receiving station in a directional manner using a directional antenna per Col. 4, lines 2-29. Applicant respectfully disagrees.

Applicant notes that pending Claim 1 does not merely address directional and omnidirectional antennas. Claim 1 explicitly addresses multi-

receiver frames and mono-receiver frames in a communication method. Pending Claim 1, in relevant part states:

"A method of communication in transmitting/receiving stations in a wireless communication network, in which **multi-receiver frames** are exchanged between a station and a plurality of other stations indicating the transmitting station and the receiving station in an omnidirectional manner using an omnidirectional antenna and **mono-receiver frames** are exchanged between the transmitting station and the receiving station, in a directional manner using directional antennas at the transmitting and at the receiving station,…" (Part of Claim 1)

The as-filed specification defines examples of multi-receiver frames as RTS and CTS frames as is well known in the art. The DATA and ACK frames are examples of mono-receiver frames, also well known in the art. (See as-filed specification, page 2 lines 21-24).

Labonte completely fails to discuss multi-receiver frames, such as RTS and CTS frames being exchanged using omnidirectional antennas and then mono-receiver frames, such as DATA and ACK frames, being exchanged using directional antennas between two stations. This failure of Labonte to associate frame types, such as RTS and CTS (multi-receiver frames) or such as DATA and ACK (mono-receiver frames), with different antenna usages is simply not addressed in Labonte at all.

Labonte discusses the use of directional antennas for two uses: one is a sector (wide beam) and the other is a smart (narrow beam) antenna. Both antennas in Labonte are directional antennas. As stated by Labonte at col. 4 lines 2-28:

"Reference is now made to FIG. 4A wherein there is shown a diagram of *directive antenna beam coverage* within a combined sectorized/smart antenna cell 100 of the present invention. A base station 102 for the cell 100 includes *a first directive (sector) antenna 104* operable to form a wide beam 106 for each sector 108, with the totality of the sector coverage formed thereby providing

substantially omni-directional radio frequency coverage throughout the cell site area. The base station 102 for the cell 100 further includes a plurality of *second directive (smart) antennas 110*, one for each sector, and each operable to form a plurality of separate, perhaps slightly overlapping, narrow beams 112 (*either switched or steerable*) within each sector 108, with the totality of the smart beams formed thereby providing substantially omni-directional radio frequency coverage throughout the cell site area. For ease of illustration only one sector 108 is shown. It is further understood that *only one physical directive antenna (comprising, for example, an antenna array) may be needed to implement the logical first and second directive antennas 104 and 110*. In operation, each of the wide beams 106 formed by the first directive antenna 104 is in continuous use to provide service within each corresponding sector 108 to mobile stations 114 present therein. With respect to the second directive antenna 110, however, only those narrow beams 112 which are needed to serve active mobile stations 114 therein are in use at a given time, as is illustrated in FIG. 4B." (Labonte, col. 4, lines 2-28)

Thus, Labonte uses directional antennas, or an array of directional antennas, to simulate the coverage effect of using an omni antenna to obtain "substantially omni-directional coverage".

Labonte, at col. 4, lines 29-49 discusses how a single "sector" antenna is used to support an entire channel such as a cell-phone digital control channel (DCCH) or a digital traffic channel (DTC) and how the "smart" antenna is used to also support the DTC cell phone channel. As is well known, DCCH and DTC channels consist of multiple message frames. But, Labonte simply does not discuss splitting up different message frames types within a channel between different antennas. In contrast, Labonte teaches that specific entire channels, such as the cell phone DCCH, are supported by a "sector" antenna. Other entire channels, such as the cell phone DTC, can be supported by either the "sector" or the "smart" antenna. Labonte does not teach that frame types in a channel are spread over multiple antenna types.

Thus, it can be well understood by those of skill in the art that Labonte fails to teach or suggest the Claim 1 element of "multi-receiver frames are exchanged between a station and a plurality of other stations indicating the transmitting station and the receiving station in an omnidirectional manner using an omnidirectional antenna and mono-receiver frames are exchanged between the transmitting station and the receiving station, in a directional manner using directional antennas at the transmitting station and the receiving station" because Labonte never discusses different frame types associated with different antennas.

Applicant also notes that Labonte does not indicate that mobile stations have directional antenna capability. Labonte shows mobile stations, such as item 24 in Figure 2B or Figure 3 or item 114 in Figure 4B, but is silent about actively using directional antennas at the mobile units. Labonte only discusses base stations as having directional antennas.

This is in contrast to the pending claims which indicate that mono-receiver frames are exchanged between the transmitting station and the receiving station, in a directional manner using directional antennas at the transmitting station and the receiving station. In order to exchange frames, both stations have directional antennas. Labonte fails to teach or suggest the use of directional antennas on both exchanging stations.

Proctor discusses in col. 4 lines 59 through col. 5 line 3 that the mobile users (14a) only have omnidirectional antennas. (See Proctor, Figure 4C, item 14a). Proctor discusses in col. 5 lines 16-20 that the fixed users (14b) have directional antennas. (See Proctor, Figure 4C, item 14b). Proctor achieves minimum interference by applying constraints to power output and throughput via the base station processor 16.

Proctor, like Labonte, completely fails to discuss splitting frame types, such as multi-receiver frames and mono-receiver frames, according to antenna type as recited in the pending claims. Specifically, Proctor also fails to teach or suggest the Claim 1 element of "multi-receiver frames are exchanged between

a station and a plurality of other stations indicating the transmitting station and the receiving station in an omnidirectional manner using an omnidirectional antenna and mono-receiver frames are exchanged between the transmitting station and the receiving station, in a directional manner using directional antennas at the transmitting station and the receiving station".

Applicant notes that pending independent Claim 9 contains distinctive aspects similar to that of pending Claim 1. Applicant respectfully submits that the Admitted Art, Labonte, and Proctor, considered either alone or considered in combination, fail to teach or suggest the features of pending independent Claims 1 and 9. Specifically, Admitted Art and both Labonte and Proctor fail to teach or suggest that multi-receiver frames are exchanged between a station and a plurality of other stations using an omnidirectional antenna and mono-receiver frames are exchanged using directional antennas at the transmitting station and at the receiving station, as recited in pending independent Claims 1 and 9.

Applicant respectfully submits that pending independent Claims 1 and 9 are thus not rendered obvious under 35 USC §103(a) per MPEP §2143 because all elements of the pending claims are not found in the cited art. Also, Claims 2-3, 5-6 and 18 are also not rendered obvious per MPEP §2143.03 because they depend on non-obvious independent Claims 1 and 9. Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of pending Claims 1-3, 5-6, 9 and 18 based on the remarks above.

The fact that Labonte and Proctor, considered either alone or in combination, fails to teach or suggest any correlation between frame types being exchanged and the use of an omnidirectional antenna and a directional antenna was previously discussed in the Office Action response dated October 30, 2009.

Applicant respectfully requests that the Examiner take note that the current claims recite a relationship between different frame types and antenna

types. Specifically, the frame types recited in the pending claims include multi-receiver frames and mono-receiver frames are as defined in the as-filed specification on page 2 of the present specification. The antenna types recited in the pending claims include omnidirectional antennas and directional antennas that are located at both stations. The multi-receiver frame types are exchanged using omnidirectional antennas and the mono-receiver type frames are exchanged using directional antennas that are located at both stations. The Examiner is respectfully requested to consider all of these aspects of the pending claims. Applicant notes that at least the different frame type elements (in association with the different antenna types) of the pending claims were not specifically addressed in prior Office Actions.

Claim Rejections Pursuant to 35 U.S.C. §103

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art in view of U.S. Patent No. 6,259,918 to Labonte et al. (Labonte) in view of U.S. Patent No. 6,941,152 to Proctor, Jr. et al. (Proctor) and in further view of U.S. Patent No. 6,132,306 to Trompower. Applicant respectfully traverses the rejection.

The teachings of Admitted Prior Art, Labonte, and Proctor are discussed above.

Trompower discusses a cellular telephone communications system with dedicated repeater channels that are located in the base stations. The discussion of Trompower discuses how the contention areas formed by overlapping cells is effectively eliminated. (See Trompower, Abstract).

However, Trompower, like Labonte and Proctor, fails to discuss that multi-receiver frames are exchanged between a station and a plurality of other stations using an omnidirectional antenna and mono-receiver frames are exchanged using directional antennas at the transmitting and receiving stations as is recited in pending independent Claim 1 upon which Claim 4 depends.

Since independent Claim 1 is not rendered obvious by the combination of Admitted Prior Art, Labonte, Proctor, and Trompower because all elements of independent Claim 1 are not taught or suggested by the combination, then dependent Claim 4 is likewise rendered non obvious under 35 U.S.C §103(a) per MPEP §2143.03. Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of pending Claim 4.

Claim Rejections Pursuant to 35 U.S.C. §103

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art in view of U.S. Patent No. 6,259,918 to Labonte et al. (Labonte) in view of U.S. Patent No. 6,941,152 to Proctor, Jr. et al. (Proctor) and in further view of U.S. Patent No. 7,092,672 to Pekonen et al. (Pekonen). Applicant respectfully traverses the rejection.

The teachings of Admitted Prior Art, Labonte, and Proctor are discussed above.

Pekonen discusses the reporting of cell measurement results in a cellular communication system. The cell measurements are performed by the transceiver station for getting cell measurement results associated with a number of the cells. Relevant cell measurement results are then selected and the selected results are transmitted in the defined reporting order. (See Pekonen, Abstract).

However, Pekonen, like Labonte and Proctor, fails to discuss that multi-receiver frames are exchanged between a station and a plurality of other stations using an omnidirectional antenna and mono-receiver frames are exchanged using directional antennas of the receiver and transmitter stations as recited in pending independent Claim 9 upon which Claim 15 depends.

Since independent Claim 9 is not rendered obvious by the combination of Admitted Prior Art, Labonte, Proctor, and Pekonen because all elements of

independent Claim 9 are not taught or suggested by the combination, then dependent Claim 15 is likewise rendered non obvious under 35 U.S.C §103(a) per MPEP §2143.03. Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of pending Claim 15.

Conclusion

Applicant respectfully submits that the amended pending claims patentably define over the cited art and respectfully requests reconsideration and withdrawal of the rejections of all pending claims based on the arguments presented herein.

Applicant respectfully requests that the Examiner reconsider all of the claim elements of the pending claims including the claimed association between types of frames and antenna types as highlighted in the arguments above.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 07-0832 therefore.

Respectfully submitted,
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